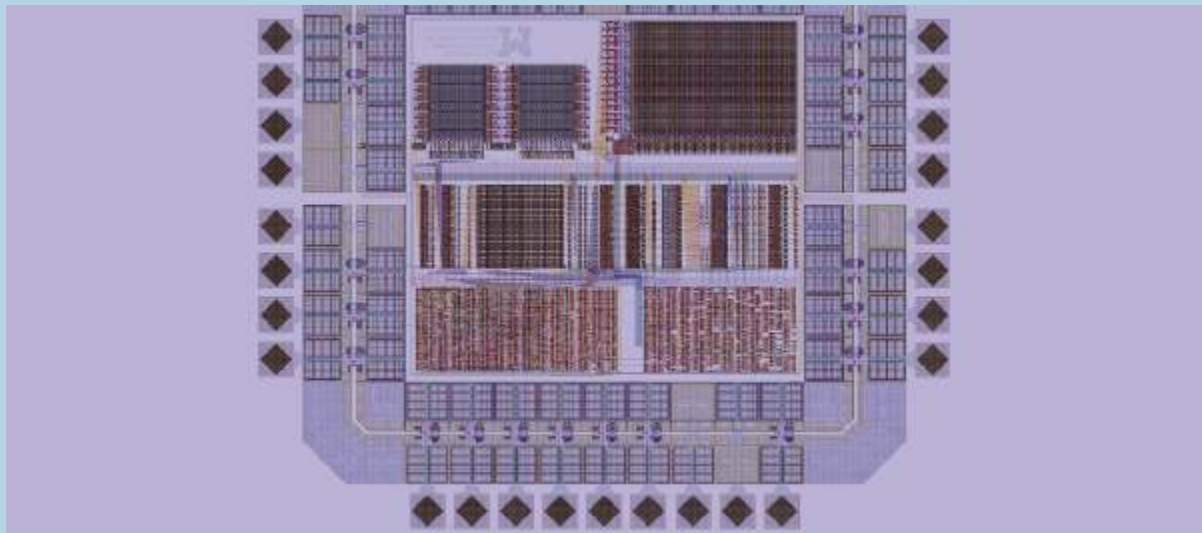


Advanced Postgraduate Program in Microelectronics and VLSI Design (APGP-MVD)

An Autonomous Full-Time Residential Postgraduate Program (24 months)

“An inadequate number of skilled engineers, due to a lack of specialized technical course, poses a big barrier to the growth of India’s VLSI Design business.”
-ISA Study report



It is anticipated that future ULSI (Ultra Large Scale Integration) chips will have a new architecture called ‘chessboard’ architecture. ‘Active Packaging’ is going to play critical role in designing such architectures. The Philips, ST Microelectronics and Motorola alliance has opened a joint R&D center in France, dedicated to future generation of nanoelectronics and semiconductor manufacturing on 300mm silicon wafers. Huge investments by the three partners and other leading semiconductor companies, in the facility and planning, is expected to create a number of job opportunities in the region and worldwide. VLSI Design is coming up very strongly on the Indian horizon, due to less initial investment cost. With all the leading IC design companies opening their design centers in India, there are many job opportunities emerging in the field of microelectronics and VLSI design. Amongst analog chips, those in the high-voltage segment in particular are registering the fastest growth.

This Advanced Postgraduate Program in Microelectronics and VLSI Design has been designed keeping in view the current needs of the field in international and national context.

ELIGIBILITY

Graduate with recognized Bachelors degree of Engineering / Technology in Electrical / Electronics / Communication / Information Technology / Computer Science / MSc in Electronics / Computer Science or equivalent with minimum 55 percent marks or equivalent grades. Basic knowledge of Digital and Analog systems.

FOCUS AREAS

- ▶ Analog and Digital Design
- ▶ Mixed Signal Design
- ▶ Low Power Design
- ▶ RF Design
- ▶ Functional and Formal Verification
- ▶ Physical Design

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COURSE STRUCTURE

	CODE	COURSE NAME	CREDITS*
BRIDGE	MVD001	Introduction to Circuit Theory	
	ESD001	Computer Architecture	
	MVD002	Introduction to Logic Design	
	MVD003	Overview of VLSI Technology	
	ESD002	Signals and Systems	
COMMON	COM001	Life Skills Development-I	2
	COM002	Life Skills Development-II	2
FOUNDATION	MVD501	Device Physics and Fabrication	3
	MVD502	Digital IC Design	3
	ESD502	Micro-Controller Based System Design-I	3
	MVD503	Analog IC Design	3
	ESD503	Digital Signal Processing	3
	MVD504	Development Using IC's	3
CORE	MVD601	ASIC Modeling	3
	MVD602	System on Programmable Chips	3
	MVD603	Functional and Formal Verification	3
	MVD604	ASIC Design Using CAD Tools	3
	MVD605	PCB Design Technology	3
ADVANCED	MVD701	Processor Architecture Modeling	3
	MVD702	Logic Synthesis and Optimization	3
	MVD703	Testing and Design for Testability	3
ELECTIVE (Choose any two)	ESD807	DSP with FPGA	3
	MVD801	Low Power IC Design	3
	MVD802	Mixed Signal IC Design	3
	MVD803	Nano Technology	3
PROJECT	MVD901	Seminar / Mini Project	2
	MVD902	Research Methodology and Mini project	2
	MVD903	Project	32

*1 Credit Hr = 16 Class Hrs / 32 Lab Hrs in a semester